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EXAMINER	
FINDLEY, CHRISTOPHER G	

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2621	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)
	10/605,744	LIN ET AL.
	Examiner	Art Unit
	Christopher Findley	2621

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 October 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 10/05/2007 have been fully considered but they are not persuasive.

2. Re claim 1, the Applicant argues that Sekiguchi fails to teach or suggest "at least one decoding module capable of decoding a predetermined signal in each of the predetermined plurality of different VOP types." (Applicant's Remarks: page 6, line 27, through page 8, line 6) However, the Examiner respectfully disagrees. Sekiguchi discloses a decoding unit (Sekiguchi: Fig. 30, MBTYPE-2 DECODING UNIT 118), which utilizes the MBTYPE-2 TABLE corresponding to Fig. 10 of Sekiguchi (Sekiguchi: column 23, lines 19-23). The MBTYPE-2 TABLE contains data for decoding a predetermined plurality or VOP types (Sekiguchi: Fig. 10, INTRA-CODING mode, BIDIRECTIONAL PREDICTION mode, BACKWARD PREDICTION mode, and FORWARD PREDICTION mode). Therefore, the MBTYPE-2 DECODING UNIT meets the disputed limitation of claim 1.

3. Re claims 9 and 13, the Applicant argues that Sekiguchi fails to teach or suggest that "the predetermined lookup table specifically corresponding to the VOP type the decoding module is to decode is transmitted from the switching circuit to the decoding module only when the decoding module requires the predetermined lookup table to complete the decoding of the VOP type." (Applicant's Arguments: page 8, lines 17-29; page 11, lines 7-12) However, the Examiner respectfully disagrees. Sekiguchi discloses that the output from the MBTYPE TABLE SELECTION INFORMATION

DECODING UNIT (Sekiguchi: Fig. 30, element 111) and the MODB DECODING UNIT (Sekiguchi: Fig. 30, element 113) are each fed to a CHANGE-OVER UNIT (Sekiguchi: Fig. 30, elements 114 and 116). Since the first change-over unit 114 that the signal passes through receives its selection input from the MODB DECODING UNIT, the block to be decoded may either be passed further along to the next change-over unit 116 and subsequently the proper decoding unit, or the block may be skipped (Sekiguchi: Fig. 30, element 115; column 24, lines 22-56) depending on the selected coding mode. Therefore, the lookup tables are only used when a coding mode requiring the lookup tables is passed through the system, not when the block is skipped.

4. Re claim 10, the Applicant argues that neither Sekiguchi nor Chen teaches or suggests the multiplexer and the data partitioned VOPs as recited in claim 10. (Applicant's Remarks: page 9, line 28, through page 10, line 22) However, the Examiner respectfully disagrees. Sekiguchi discloses a motion compensation unit (Sekiguchi: Fig. 29, element 104), the motion compensation unit receiving multiple inputs from the SYNTAX ANALYSIS AND VARIABLE LENGTH DECODING UNIT (Sekiguchi: Fig. 29, element 101), which corresponds to Fig. 30 of Sekiguchi. The internal working of the motion compensation unit is shown in Fig. 31 of Sekiguchi. In the motion compensation unit, a change-over is performed in response to the MBTYPE (Sekiguchi: Fig. 31, element 141). The output from the selected prediction unit is then sent to the memory (Sekiguchi: Figs. 29 and 31, element 75). The motion compensation is additionally connected to the output of the SHAPE DECODING UNIT (Sekiguchi: Fig. 29, element 102). Thus, the motion compensation unit processes data

partitioned VOPs, since it receives separate signals for the shape data and motion data (Sekiguchi: Fig. 31, motion information 310 and decoded shape data 318).

5. A detailed rejection of the claims is included below.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

7. Claims 1, 10-15, and 21-22 are rejected under 35 U.S.C. 102(a) as being anticipated by Sekiguchi et al. (US 6493385 B1).

Re claim 1, Sekiguchi discloses a video decoding unit for decoding a predetermined plurality of different video object plane (VOP) types (Sekiguchi: Fig. 10; coding modes listed include intra-coding, bidirectional prediction, and both forward and backward prediction), the decoding unit comprising: at least one decoding module capable of decoding a predetermined signal in each of the predetermined plurality of different VOP types and outputting a decoded result specifically corresponding to the VOP type currently being decoded (Sekiguchi: Fig. 30; decoding is carried out by the decoder corresponding to MB Type); wherein the decoded result includes a plurality of parameters (Sekiguchi: Fig. 29, the syntax analysis and variable length decoding unit 101 produces multiple outputs).

Re claim 10, Sekiguchi discloses a device comprising: a memory (Sekiguchi: Figs 29 and 31, element 75); a plurality of video decoding modules, each video decoding module capable of decoding a predetermined signal in a Data-partitioned intra video object plane (DP-I VOP) and capable of decoding the predetermined signal in a Data partitioned predicted video object plane (DP-P VOP) (Sekiguchi: The motion compensation unit (Sekiguchi: Fig. 29, element 104; Fig. 31) is receives decoded shape data (Sekiguchi: Fig. 31, input 318) and motion information (Sekiguchi: Fig. 31, input 310). Therefore, the system processes data partitioned VOPs, since the motion compensation unit processes separate signals for the shape data and motion data (Sekiguchi: Fig. 31, motion information 310 and decoded shape data 318)) and outputting a decoded result according to the type of VOP wherein the decoded result includes a plurality of parameters (Sekiguchi: Fig. 29, the syntax analysis and variable length decoding unit 101 produces multiple outputs); a multiplexer having inputs respectively connected to outputs of the plurality of video decoding module and having an output connected to the memory (Sekiguchi discloses a motion compensation unit (Sekiguchi: Fig. 29, element 104), the motion compensation unit receiving multiple inputs from the SYNTAX ANALYSIS AND VARIABLE LENGTH DECODING UNIT (Sekiguchi: Fig. 29, element 101), which corresponds to Fig. 30 of Sekiguchi. The internal working of the motion compensation unit is shown in Fig. 31 of Sekiguchi. In the motion compensation unit, a change-over is performed in response to the MBTYPE (Sekiguchi: Fig. 31, element 141). The output from the selected prediction unit is then sent to the memory (Sekiguchi: Figs. 29 and 31, element 75)) and a switching circuit

connected to the plurality of video decoding modules for indicating to each decoding module which type of VOP is to be decoded and connected to the multiplexer for controlling which decoded result is transmitted to the memory (Sekiguchi: MBTYPE 308 is connected to the change-over unit 141 of Sekiguchi Fig. 31, which controls what prediction unit sends data to the memory 75).

Re claim 11, Sekiguchi discloses that, referring to Fig. 30, "The MBTYPE-1 table of the MBTYPE-1 decoding unit 117 and the MBTYPE-2 table of the MBTYPE-2 decoding unit 118 respectively have contents shown in FIG. 9 or FIG. 10 described in the picture coding apparatus of the second embodiment (Sekiguchi: column 23, lines 19-23)." Figs. 9 and 10 show different coding modes, including intra-coding, bidirectional prediction, and both forward and backward prediction. Furthermore, Sekiguchi discloses in column 13, lines 19-31 and 49-63, that the code-word indicating each coding mode is registered to the MBTYPE-1 or MBTYPE-2 decoding unit. Since each coding-mode has unique properties, and uses different parameters, the table for each coding-mode is unique.

Claim 12 has been analyzed and rejected in view of the analysis for claim 11 above.

Re claim 13, Sekiguchi discloses that the predetermined lookup table specifically corresponding to the VOP type the decoding module is to decode is transmitted from the switching circuit to the decoding module (Sekiguchi: column 13, lines 19-31 and 49-63; The specific parameters are for each coding mode are registered in the MBTYPE tables for each coding mode. This occurs through the change-over unit 116 (Fig.30),

since both the control signal 302 and coded bit stream 316 (via blocks 112, 113, and 114) are fed into the change-over unit 116, and not directly to the MBTYPE decoding units 117 and 118) only when the decoding module requires the predetermined lookup table to complete the decoding of the VOP type (Sekiguchi: Fig. 30, the MBTYPE table selection information decoding unit 111 and the MODB decoding unit 113 control the path of the change-over units 114 and 116, respectively, thereby only decoding blocks according to a certain type in the MBTYPE table when required).

Re claim 14, the MB type from Figs. 9 and 10 of Sekiguchi (which indicate the coding mode) are used by the change-over unit 116 in Fig. 30, and the signal is passed to the decoding unit (either 117 or 118) depending on the MB type. The path set by the change-over unit remains fixed until the MB type indicates the other decoder to be used. Therefore, the path set between the change-over unit 116 and the decoding unit (117 or 118) based on the MB type acts as a VOP type indicating flag, where the flag indicates which decoding unit to be used.

Claim 15 has been analyzed and rejected in view of the analysis for claim 14 above.

Re claim 21, Sekiguchi discloses that the decoding module is capable of storing a lookup table including lookup table information corresponding to the different VOP types (Sekiguchi: Figs. 9 and 10; Fig. 30, elements 117 and 118).

Re claim 22, Sekiguchi discloses that each video decoding module is capable of storing a lookup table including lookup table information corresponding to a DP-I VOP and a DP-P VOP (Sekiguchi: The motion compensation unit (Sekiguchi: Fig. 29,

element 104; Fig. 31) is receives decoded shape data (Sekiguchi: Fig. 31, input 318) and motion information (Sekiguchi: Fig. 31, input 310). Therefore, the system processes data partitioned VOPs, since the motion compensation unit processes separate signals for the shape data and motion data (Sekiguchi: Fig. 31, motion information 310 and decoded shape data 318)).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

10. Claims 2-9, 16-20, and 23-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sekiguchi et al. (US 6493385 B1).

Re claim 2, Sekiguchi does not specifically disclose that the decoded result is based upon a predetermined lookup table specifically corresponding to the VOP type currently being decoded. However, Sekiguchi does disclose in Fig. 30 a change-over

unit 116, which receives a control signal 302 from a MBTYPE table selection information decoding unit 111, and selects a corresponding decoding unit 117 and 118 based on the macroblock type. The resultant quantization step information 309 and block data 307 from the system of Fig. 30 is fed to the inverse quantization unit 72 in Fig. 29. The Examiner takes Official Notice that the use of lookup tables corresponding to specific picture types (I, P, or B) when performing quantization or dequantization is notoriously well known in the art and would have been obvious to a person having ordinary skill in the art at the time of the invention.

Re claim 3, Sekiguchi discloses that, referring to Fig. 30, "The MBTYPE-1 table of the MBTYPE-1 decoding unit 117 and the MBTYPE-2 table of the MBTYPE-2 decoding unit 118 respectively have contents shown in FIG. 9 or FIG. 10 described in the picture coding apparatus of the second embodiment (column 23, lines 19-23)." Figs. 9 and 10 show different coding modes, including intra-coding, bidirectional prediction, and both forward and backward prediction. Furthermore, Sekiguchi discloses in column 13, lines 19-31 and 49-63, that the code-word indicating each coding mode is registered to the MBTYPE-1 or MBTYPE-2 decoding unit. Since each coding-mode has unique properties, and uses different parameters, the table for each coding-mode is unique.

Re claim 4, Sekiguchi discloses a switching circuit connected to the decoding module for determining which of the predetermined plurality of VOP types the decoding module is to decode (Sekiguchi: Fig. 30/116; Fig. 29/76, further detailed by Fig. 31).

Re claim 5, Sekiguchi discloses a motion compensation unit (Sekiguchi: Fig. 29, element 104), the motion compensation unit receiving multiple inputs from the SYNTAX ANALYSIS AND VARIABLE LENGTH DECODING UNIT (Sekiguchi: Fig. 29, element 101), which corresponds to Fig. 30 of Sekiguchi. The internal working of the motion compensation unit is shown in Fig. 31 of Sekiguchi. In the motion compensation unit, a change-over is performed in response to the MBTYPE (Sekiguchi: Fig. 31, element 141). The output from the selected prediction unit is then sent to the memory (Sekiguchi: Figs. 29 and 31, element 75).

Re claim 6, Sekiguchi discloses that the output of a multiplexer is determined by a switching circuit (Sekiguchi: Fig. 31, MBTYPE 308 determines, via the change-over unit 141, which prediction unit receives the motion information 310, and thus the corresponding output).

Re claim 7, the MB type from Figs. 9 and 10 of Sekiguchi (which indicate the coding mode) are used by the change-over unit 116 in Fig. 30, and the signal is passed to the decoding unit (either 117 or 118) depending on the MB type. The path set by the change-over unit remains fixed until the MB type indicates the other decoder to be used. Therefore, the path set between the change-over unit 116 and the decoding unit (117 or 118) based on the MB type acts as a VOP type indicating flag, where the flag indicates which decoding unit to be used.

Claim 8 has been analyzed and rejected in view of the analysis for claim 7 above.

Re claim 9, Sekiguchi discloses that the predetermined lookup table specifically corresponding to the VOP type the decoding module is to decode is transmitted from the switching circuit to the decoding module (Sekiguchi: column 13, lines 19-31 and 49-63; The specific parameters are for each coding mode are registered in the MBTYPE tables for each coding mode. This occurs through the change-over unit 116 (Fig.30), since both the control signal 302 and coded bit stream 316 (via blocks 112, 113, and 114) are fed into the change-over unit 116, and not directly to the MBTYPE decoding units 117 and 118) only when the decoding module requires the predetermined lookup table to complete the decoding of the VOP type (Sekiguchi: Fig. 30, the MBTYPE table selection information decoding unit 111 and the MODB decoding unit 113 control the path of the change-over units 114 and 116, respectively, thereby only decoding blocks according to a certain type in the MBTYPE table when required).

Re claim 16, Sekiguchi discloses a method for decoding a plurality of different types of MPEG video object planes (VOP), the method comprising: providing a decoding module capable of decoding a predetermined signal in the different types of VOP (Sekiguchi: Fig. 33/ST95); and indicating to the decoding module which of the different types of VOP the decoding module is to decode (Sekiguchi: Fig. 33/ST96 and ST98); and outputting a decoded result including a plurality of parameters (Sekiguchi: Fig. 29, the syntax analysis and variable length decoding unit 101 produces multiple outputs).

Sekiguchi does not specifically disclose the decoding module accessing a lookup table specifically corresponding to the indicated type of VOP to decode the

predetermined signal. However, Fig. 33 corresponds to the system depicted in Fig. 30, which is a component of the system depicted in Fig. 29. Fig. 29 corresponds to the method shown in Fig. 32 and includes an inverse quantization step (Sekiguchi: Fig. 32/ST52; Fig. 29/72). The Examiner takes Official Notice that the use of lookup tables corresponding to specific picture types (I, P, or B) when performing quantization or dequantization is notoriously well known in the art and would have been obvious to a person having ordinary skill in the art at the time of the invention.

Re claim 17, Sekiguchi discloses that, referring to Fig. 30, "The MBTYPE-1 table of the MBTYPE-1 decoding unit 117 and the MBTYPE-2 table of the MBTYPE-2 decoding unit 118 respectively have contents shown in FIG. 9 or FIG. 10 described in the picture coding apparatus of the second embodiment (column 23, lines 19-23)." Figs. 9 and 10 show different coding modes, including intra-coding, bidirectional prediction, and both forward and backward prediction. Furthermore, Sekiguchi discloses in column 13, lines 19-31 and 49-63, that the code-word indicating each coding mode is registered to the MBTYPE-1 or MBTYPE-2 decoding unit. Since each coding-mode has unique properties, and uses different parameters, the table for each coding-mode is unique.

Re claim 18, the MB type from Figs. 9 and 10 of Sekiguchi (which indicate the coding mode) are used by the change-over unit 116 in Fig. 30, and the signal is passed to the decoding unit (either 117 or 118) depending on the MB type. The path set by the change-over unit remains fixed until the MB type indicates the other decoder to be used. Therefore, the path set between the change-over unit 116 and the decoding unit (117 or

118) based on the MB type acts as a VOP type indicating flag, where the flag indicates which decoding unit to be used.

Claim 19 has been analyzed and rejected in view of the analysis for claim 18 above.

Re claim 20, Sekiguchi discloses that the type of VOP the decoding module is to decode is indicated by a switching circuit (Sekiguchi: Fig. 30, the MBTYPE table selection information decoding unit 111 and the MODB decoding unit 113 control the path of the change-over units 114 and 116, respectively, thereby only decoding blocks according to a certain type in the MBTYPE table when required); and the method further comprises: transmitting the corresponding lookup table of the type of VOP the decoding module is to decode from the switching circuit to the decoding module (column 13, lines 19-31 and 49-63; The specific parameters are for each coding mode are registered in the MBTYPE tables for each coding mode. This occurs through the change-over unit 116 (Fig.30), since both the control signal 302 and coded bit stream 316 (via blocks 112, 113, and 114) are fed into the change-over unit 116, and not directly to the MBTYPE decoding units 117 and 118) only when the decoding module requires the predetermined lookup table to complete the decoding of the VOP type (Sekiguchi: Fig. 30, the MBTYPE table selection information decoding unit 111 and the MODB decoding unit 113 control the path of the change-over units 114 and 116, respectively, thereby only decoding blocks according to a certain type in the MBTYPE table when required).

Re claim 23, Sekiguchi discloses that the decoding module is capable Of storing a lookup table including lookup table information corresponding to the different VOP types (Sekiguchi: Figs. 9 and 10; Fig. 30, elements 117 and 118).

Re claim 24, Sekiguchi discloses a motion compensation unit (Sekiguchi: Fig. 29, element 104), the motion compensation unit receiving multiple inputs from the SYNTAX ANALYSIS AND VARIABLE LENGTH DECODING UNIT (Sekiguchi: Fig. 29, element 101), which corresponds to Fig. 30 of Sekiguchi. The internal working of the motion compensation unit is shown in Fig. 31 of Sekiguchi. In the motion compensation unit, a change-over is performed in response to the MBTYPE (Sekiguchi: Fig. 31, element 141). The output from the selected prediction unit is then sent to the memory (Sekiguchi: Figs. 29 and 31, element 75).

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

a. Image decoder, image encoder, image communication system, and encoded bit stream converter; Isu et al. (US 6862320 B1)

b. Image editing apparatus and method; Itokawa (US 7058128 B1)

c. Predictive encoding and decoding methods of video data; Jozawa et al. (US 6785331 B1)

d. Apparatus for system decoder and method for error correction of packet data; Suzuki et al. (US 7131048 B2)

e. Information processing method and apparatus; Nakagawa et al. (US 6810131 B2)

f. View offset estimation for stereoscopic video coding; Chen (US 6043838 A)

Contact

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher Findley whose telephone number is (571) 270-1199. The examiner can normally be reached on Monday-Friday 8:30am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marsha D. Banks-Harold can be reached on (571) 272-7905. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Christopher Findley/

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